Geologic Features and Genesis Discussion of Bangxi Jiu Dui Deposit in Baisha County, Hainan

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1 Regional Geological Background and Geological Feature

1.1 Regional geological background

The mining area is located in southern part of the eastern edge of the fold lines Wuzhishan fold belt, north-east Tian-Hongling big break on the eastern side of Northeast in October, the North-West to the barracks times Bangxi fault zone in north-central level, which are two fracture with settlement site, and where the fault structure develops well. Large faults developed mainly north-east region, then followed by Northwest, north and south small fractures. Au deposits are mainly distributed in the fracture alteration zone in the north west. In addition, regional magmatic activity is relatively frequent, and has multi-stage characteristics.

1.2 Geological feature

The mining area is located in the foothill of the district general elevation above sea level between 20-95m undulating terrain. Mine outcropping stratas mainly include Quaternary Pleistocene North Sea Group (QP2b), Permian Echa group-Eding group (P1e-ed), Silurian Dagancun group-Kaoqinshan group (S2d-kp) and Ordovician Nanbigou group (On). Attitude of rocks for the North West in general strike, the dip 30° - 80°. Lithology of the region is widely distributed and complex, the width is unknown. The ore formation is a major metamorphic quartz sandstone, quartzite and slate covering a wider area topsoil. The vegetation growing well and less rocky outcrop are on adverse geological work carried out. Mine developed faults, mainly NE, NW trending faults up to more than ten, the mine has not been found outcropping magmatic rocks, but only a few diabase mine in south-central veins.

2 Petrogeochemical Characteristics of the Acid Intrusive Rocks

2.1 The orebody distribution and characteristics

Currently, mine ore can determine four: the II orebody, the III orebody, the IV and the VI orebody. All orebodies were distributed in different tectonic alteration zone, and the orebody and alteration zones occurrence basically. The II orebody is located in the west area of oxide veins and silicified alteration type dominated veins, and is into the strip output. Thinning-out and Recurrence Parts is obvious. Surrounding rock mainly contains quartz gravel, silt and fine sandstone and phyllite. Both their boundaries are blurred. Each vein has roughly same form, roughly 330° direction, tending southwest dip between 55° - 65°; the VI orebody is located in the north west of the mine ore, with veins of quartz vein-type alteration and silicification mainly to strip outputs. Surrounding rock contains quartz gravel slate, phyllite mainly quartz veins in the body is relatively clear boundary between the oxidized zone, but the boundaries of the oxidation zone in the surrounding rock would obscure much, to have roughly 330° direction, tended southwest dip roughly between 55° -65°; III and VI orebodies are failed by engineering controls, only some oxidized outcrop outcropping.

2.2 The ore characteristics

The area of its natural ore types are oxidized ores and primary ores types. Oxidized ores mainly distributed in both sides of alteration II and VI ore ore belt, is a low-grade gold ore. The VI native sulphide vein type gold ore outcrops to structural alteration in the form of quartz vein-type clip output. Mineral composition is relatively simple, metallic minerals are native gold and pyrite, quartz gangue minerals, with minor sericite, muscovite, calcite, chlorite, epidote, which are not visible native gold deposits, was he shaped aggregates like granular or small veins located in silicified alteration crack surface. Most of the pyrite has been oxidized to limonite, like a majority of leaching and distributed in the mineralized alteration zone orebody surface area. Quartz with irregular granular, gray, gray with oil sheen, compared with growth fissure quartz ore better. The main structure of the ore has since shaped....

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subhedral granular texture, subhedral-anhedral granular structure, scales granoblastic structure, accountability structures and porphyritic crush structures. Ore massive structure constructed primarily for alteration, vein-like structure, loose structure and disseminated under oxidizing conditions massive structure and so on.

2.3 The alteration characteristics

The wall rock alteration zone development, common alteration types are silicification, sericite, chlorite, calcite and pyrite mineralization. This area is the most important and most widely distributed of alteration, mineralization and alteration zones and veins where the distribution of lots has its existence. Sericite quartz plagioclase precipitation process of the formation of siliceous and generally accompanied by pyrite, pyrite phyllic formation, or the formation of coarse grains ranging form his veins, silicified quartzite lenticular form silicide yellow silicified alteration with iron pyrite or phyllic alteration zones, is the most direct orebody altered rocks in this area, the stronger gold higher silica alteration. Late silicification mainly as fracture fillings of quartz veinlets output, little sulfide distribution. The area is also one of the main alteration is an early form of hydrothermal alteration of plagioclase, sericite scaly or flaky aggregates replacing feldspar, quartz grains distributed in between. Sericite and silicification closely, feldspar sericite stronger then the stronger silicification. The performance of biotite, amphibole chlorite, accompanied by precipitation of iron, forming disseminated pyrite and veinlets along fractures palatable filling. Often accompanied by carbonate (calcite) epidote veinlets occur. Usually found outside the body strong silicification and altered rock type gold ore.Pyritization: Early pyrite and silicification, sericitization symbiosis, consisting of pyrite phyllic generally euhedral higher degree of crystallinity, was disseminated distribution.

3 Conclusions

Mine is located in the North East to North East Gezhen fault, is Shiyuetian - Hongling break in North East North West to break camp Bangxi-interchange. Mine main fracture direction NW, secondary fault direction is north-east, north-east trending fault fissures structural development, the North West region mineralization by the altered mylonite zone to control the formation of gold created a favorable geological environment.

(1) the formation conditions: big Silurian strata of the village is the main ore zone control, higher alteration along the contact surface gold grade, said Ming-chi in the Silurian phyllite gold mineralization enrichment provided the material source.

(2) structural conditions: The area of gold mineralization, gold body significantly affected north-west, north-east trending fault fracture control, the main veins on the faults and fractures confers more than two configurations. Gold fissure fracture migration, sedimentation and enrichment channel and provides the necessary space.

(3) magmatic conditions: multi-stage tectonic movements and related magmatic activity accompanied by the formation and activities of post-magmatic hydrothermal mineralization, the formation of the gold zones provide the necessary conditions for thermal power.

(4) many types of rock alteration widespread: Description mine rock formations and experienced repeated thermal metamorphism, due to changes in temperature and pressure affect the physical and chemical conditions and contributed to gold and other useful elements with precipitation and hydrothermal mineralization migration, sedimentation and enrichment in a favorable space.

Therefore, the preliminary view that gold deposits in this area are produced in fractured igneous rocks off the crack is filled with hydrothermal alteration type gold deposit account.

References


